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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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01/16/2002

Sacha Corbeil

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12/21/2004

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EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/050,738	CORBEIL ET AL.	
	Examiner	Art Unit	
	Agustin Bello	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/16/02</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taga (U.S. Patent No. 5,872,647) in view of Epworth (U.S. Patent No. 5,513,030).

Regarding claim 1, Taga teaches a method for synchronizing a pulse stream with a data stream in an optical communication system, comprising: generating an optical data signal (e.g. "LIGHT SIGNAL OUTPUT" in Figure 1) for transmission through the optical communication system, the data stream having a duty cycle less than fifty percent (column 3 lines 14-18), the optical data signal being formed from the pulse stream (e.g. "CLOCK" in Figure 1) and the data stream (reference letter "d" in Figure 1), and synchronizing the pulse stream with the data stream (column 4 lines 11-27). Taga differs from the claimed invention in that Taga fails to specifically teach detecting an optical power level associated with the optical data signal and synchronizing the pulse stream with the data stream based on the optical power level associated with the optical data signal. However, these steps are well known in the art. Epworth, in the same field of optical synchronization, teaches detecting an optical power level associated with the optical data signal (column 2 lines 65-67) synchronizing the pulse stream with the data stream based on the optical power level associated with the optical data signal (column 3 lines 1-12). One skilled in the art would have been motivated to follow the method steps disclosed by Epworth in order to

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assist in overcoming noise (column 1 lines 6-14 of Epworth). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to detect an optical power level associated with the optical data signal and synchronizing the pulse stream with the data stream based on the optical power level associated with the optical data signal.

Regarding claim 2, Taga teaches that the pulse stream have a Return to Zero transmission format (reference numeral 2 in Figure 1) and a phase relative to the data stream (inherent).

Regarding claim 3, Taga teaches that the step of synchronizing the pulse stream with the data stream further comprises adjusting the phase of the pulse stream (via reference numeral 6 in Figure 1).

Regarding claim 4, Taga teaches that the step of adjusting the phase of the pulse stream further comprises adjusting a phase offset setting of a pulse driver (via reference numeral 6 in Figure 1).

Regarding claims 5-10, Taga fails to specifically teach the various methods for reducing the duty cycle of the signal. However, the steps recited involve only routine observation and experimentation with the signals of the system. One skilled in the art would clearly have recognized the effect of different system settings through observation of an eye diagram of the signals and therefore could have reduced the duty cycle based on the observations. In other words, the claimed limitation would have involved only routine experimentation well within the realm of knowledge of one skilled in the art. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to reduce the duty cycle of the signal according to the various methods claimed.

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Regarding claim 11, Taga teaches maintaining the duty cycle below fifty percent over a transit exchange lifetime of the data stream (column 3 lines 14-18).

Regarding claim 12, Taga teaches that the step of maintaining the duty cycle further comprises at least one of an appropriate modulator bias and data driver amplitude control loops (Figure 9).

Regarding claim 13, the combination of Taga and Epworth teaches that the step of adjusting is further defined as dithering the phase offset setting at a dither frequency (reference numeral 41 in Figure 4 of Epworth).

Regarding claim 14, the combination of Taga and Epworth teach that the step of synchronizing the pulse stream with the data stream further comprises using an analog control loop (see Epworth).

Regarding claim 15, the combination of references teaches the step of adjusting is further defined as dithering the phase offset setting at a phase change amount (via reference numeral 41 in Figure 4 of Epworth).

Regarding claim 16, the combination of references teaches the step of measuring the output power at transit exchange outputs (column 2 lines 65-67 of Epworth).

Regarding claim 17, the combination of references teaches maximizing the optical power level associated with the optical data signal (column 3 lines 1-12).

Regarding claim 18, the combination of references teaches that the step of synchronizing the pulse stream with the data stream further comprises using closed loop feedback control (as seen in Epworth).

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Regarding claims 19-21, the combination of references teaches a propagating wave comprising a gated pulse wave for transmission over an optical generated by a pulse source (reference numeral 5 in Figure 1 of Taga) and a data source (reference letter "d" in Figure 1 of Taga), said pulse source and said data source synchronized according to the method of claim 1.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimizu discloses relevant art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB

Agustin Bello
Examiner
Art Unit 2633

